

AMENDMENTS TO THE CLAIMS

Please **AMEND** claims 1-9 and 15-29 as shown below.

Please **ADD** claims 30-35 as shown below.

The following is a complete list of all claims in this application.

1. (Currently Amended) A display device, comprising:

a substrate comprising:

a pixel region having a pixel for producing an image; and

a peripheral region adjoining the pixel region and having a pad connected to the pixel for applying an electrical signal to the pixel;

~~a first region including: a pixel region including a pixel for producing an image; and a peripheral region surrounding the pixel region; and a second region including a pad connected to the pixel for applying an electrical signal from outside to the pixel; and an insulation layer formed on the first pixel region and second regions~~ the peripheral region with an opening formed in the insulation layer to expose the pad; and

an opening region formed in the peripheral region, wherein the pad is formed in the opening region and the opening region has a periphery greater than that of the pad ~~the insulation layer has a first thickness in the opening and a second thickness in the peripheral region, and second thickness is greater than the first thickness.~~

2. (Currently Amended) The display device ~~as claimed in~~ of claim 1, wherein the insulation layer has a first thickness in the opening region and a second thickness in the peripheral region except for the opening region, the first thickness being smaller than the second thickness ~~the pixel region is arranged on the substrate, and the peripheral region is arranged around the pixel region.~~

3. (Currently Amended) The display device ~~as claimed in~~ of claim 2, wherein the pixel comprises a thin film transistor as a switching device, and the pad comprises a gate input pad and a data input pad.

4. (Currently Amended) The display device ~~as claimed in~~ of claim 2 ~~1~~, wherein the second thickness is about 0.3 to about 3.0 μm .

5. (Currently Amended) The display device ~~as claimed in~~ of claim 2 ~~1~~, wherein a difference between the second thickness and the first thickness is about 2.1 to about 2.4 μm .

6. (Currently Amended) The display device ~~as claimed in~~ of claim 1, wherein a rugged structure is formed on the insulation layer in the pixel region.

7. (Currently Amended) The display device ~~as claimed in~~ of claim 6, wherein a thickness of the insulation layer in the pixel region is no more than the second thickness.

8. (Currently Amended) The display device ~~as claimed in~~ of claim 1, wherein the insulation layer comprises:

a first organic insulation layer formed in the ~~first pixel region~~ and the peripheral region except for the opening region; and

a second organic insulation layer formed in the ~~first pixel region~~ and the second regions peripheral region including the opening region,

wherein the second organic insulation layer ~~comprises~~ has a rugged structure ~~formed in~~ in the pixel region and an opening formed in the ~~second opening region~~ and exposing the pad.

9. (Currently Amended) The display device ~~as claimed in~~ of claim 1, wherein the insulation layer comprises:

a first insulation layer patterns having a reflective electrode patterns pattern of a first insulation layer ~~formed in the pixel region and a peripheral patterns pattern in of the first insulation layer covering the peripheral region~~; and

a second insulation layer covering the first insulation layer and having a rugged structure in the pixel region and an opening exposing the pad in ~~second the opening region~~,

wherein ~~the second insulation layer covers the first insulation layer patterns and the second insulation layer is continuously formed from~~ expanded from the ~~first pixel~~ region to the ~~second window~~ region.

10. (Original) A reflection type liquid crystal display device, comprising:

a first substrate having a first region and a second region wherein the first region includes a pixel region on the first substrate where a pixel is formed to produce an image and a peripheral

region surrounding the pixel region and a pad connected to the pixel is formed on the second region for applying an electrical signal to the pixel from outside;

a second substrate opposed to the first substrate;

a liquid crystal layer formed between the first substrate and the second substrate;

a reflection electrode formed at the central portion of the first substrate, the reflection electrode having a rugged structure comprising a relatively high portion and a relatively low portion; and

an organic insulation layer formed between the first substrate and the reflection electrode and formed in the first region and the second regions wherein the organic insulation layer has a rugged structure identical to the rugged structure of the reflection electrode at a central portion of the first region and an opening in the second region to expose the pad, and a second thickness of the organic insulation layer around the opening is less than a first thickness of the organic insulation layer in the peripheral region.

11. (Original) The reflection type liquid crystal display device as claimed in claim 10, wherein the rugged structure comprises a plurality of protrusions and a plurality of grooves.

12. (Original) The reflection type liquid crystal display device as claimed in claim 10, wherein the second thickness is about 0.3 to about 3.0 μm .

13. (Original) The reflection type liquid crystal display device as claimed in claim 10, wherein a difference between the second thickness and the first thickness is about 2.1 to about 2.4 μm .

14. (Original) The reflection type liquid crystal display device as claimed in claim 10, wherein a thickness of the organic insulation layer in the pixel region is no greater than the second thickness.

15. (Currently Amended) A method for manufacturing a display device, comprising the steps of:

forming a pixel in a pixel region of a first region of a substrate, ~~the first region including the pixel region and a peripheral region around the pixel region, and;~~

forming a pad in a ~~second peripheral~~ region of the substrate ~~for applying an electric signal to the pixel;~~

forming an insulation layer over the pixel region and a peripheral region;

patterning the insulating layer to form an opening region in the peripheral region, the opening region including the pad and having a periphery greater than that of the pad ~~having an opening in the second region to expose the pad and wherein the insulation layer being formed in the first region and the second region and a second thickness of the insulation layer around the opening is less than a first thickness of the insulation layer in the first region; and~~

~~forming a pad electrode in the opening and on the insulation layer formed around the opening in the second region.~~

16. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 15, wherein the insulation layer has a first thickness in the opening region and a second thickness in the peripheral region except for the opening region, the first thickness being

smaller than the second thickness wherein the pixel region is positioned on the substrate and the second region is positioned in the peripheral region of the substrate.

17. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 15 ~~16~~, wherein the step of forming the pixel comprises a step for forming a thin film transistor as a switching device, and

the step for forming the pad comprises a step for forming a gate input pad and a data input pad for applying an electric signal to the switching device.

18. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 15, further comprising a step for forming a reflection electrode on the insulation layer in the pixel region and forming a pad electrode on the pad in the opening second region.

19. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 18, wherein the reflection electrode and the pad electrode are simultaneously formed by coating a metal layer composed of a reflective metal on the insulation layer and by patterning the metal layer.

20. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 15, wherein the step for forming the insulation layer ~~further~~ comprises the steps of:
forming a first insulation layer on the substrate;
selectively removing the first insulation layer in the opening second region;

forming a second insulation layer in the first pixel region and in the second peripheral region; and

forming the an opening exposing the pad in the second insulation layer in the opening region.

21. (Currently Amended) The method ~~for manufacturing a display device as claimed~~ in of claim 20, wherein the first insulation layer and the second insulation layer are ~~composed of~~ organic resists.

22. (Currently Amended) The method ~~for manufacturing a display device as claimed~~ in of claim 20, wherein the step for selectively removing the first insulation layer in the second opening region ~~further~~ comprises:

forming a contact hole in the first insulation layer for connecting the pixel;
full exposing the first insulation layer with an exposure amount for forming the contact hole after a first mask is positioned over the first insulation layer to remove the first insulation layer; and
developing the exposed first insulation layer.

23. (Currently Amended) The method ~~for manufacturing a display device as claimed~~ in of claim 20, wherein the step for forming the opening in the second insulation layer ~~further~~ comprises the steps of:

forming a rugged structure on the second insulation layer after a second mask is positioned over the second insulation layer;

exposing the second insulation layer with an exposure amount identical to an exposure amount for forming the rugged structure after the second mask for forming the opening is positioned over the second insulation layer; and
developing the exposed second insulation layer.

24. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 15, wherein the step for forming the insulation layer ~~further~~ comprises:

forming a first insulation layer on the pixel region and the peripheral region ~~substrate~~;
patterning the first insulation layer to form ~~an insulation layer pattern~~ a contact hole in the pixel region and to selectively remove the first insulation layer in the ~~second~~ opening region;
forming a second insulation layer in the ~~first~~ pixel region and the ~~second~~ peripheral region; and
forming an opening in the second insulation layer in the ~~second~~ opening region.

25. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 24, wherein the step for patterning the first insulation layer further comprises:

positioning a first mask on the first insulation layer for forming a rugged structure and a contact hole;
~~full~~ exposing the first insulation layer with an exposure amount for forming the contact hole; and
developing the exposed first insulation layer.

26. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 25, wherein the step for forming the opening ~~is performed by~~ comprises steps of:

positioning a second mask over the second insulation layer for forming the contact hole and the opening;

exposing the second insulation layer; and

developing the exposed second insulation layer.

27. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 15, wherein the step for forming the insulation layer ~~further comprises the steps of:~~

forming an organic insulation layer on the substrate;

primarily exposing the organic insulation layer with a full exposure amount for removing the organic insulation layer on the pad;

partially exposing the organic insulation layer in the ~~second~~ opening region; and

forming an opening in the ~~second~~ opening region and partially removing the organic insulation layer around the opening in the ~~second~~ opening region by developing the exposed organic insulation layer.

28. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 27, wherein the step for primarily exposing the organic insulation layer comprises steps of: is performed by

positioning a first mask over the organic insulation layer; and

exposing the organic insulation layer with a full exposure amount ~~after a first mask is positioned over the organic insulation layer~~ for forming the opening and a contact hole for electrically connecting the pixel.

29. (Currently Amended) The method ~~for manufacturing a display device as claimed in~~ of claim 28, wherein the step for ~~partially~~ exposing the organic insulation layer is performed by exposing the organic insulation layer and the second region with a lens exposure amount for forming a reflection electrode on the organic insulation layer.

30. (Newly added) A display device comprising:
a substrate comprising:
a pixel region having a pixel formed thereon and a peripheral region; and
a peripheral region having a pad connected to the pixel, wherein the peripheral region has an opening region and the pad is formed within the opening region;
a first insulating layer formed over the pixel region including the pixel and the peripheral region except for the opening region; and
a second insulating layer formed on the pixel region and the peripheral region including the opening region and having an opening exposing the pad.

31. (Newly added) The display device of claim 30, further comprising a rugged structure formed on a surface of the second insulation layer.

32. (Newly added) The display device of claim 30, wherein the first insulation layer includes a plurality of grooves, and the second insulation layer has a rugged surface.
33. (Newly added) A method of manufacturing a display device, comprising steps of:
forming a pixel in a pixel region of a substrate;
forming a pad in a peripheral region of the substrate, wherein the peripheral region has an opening region and the pad is formed within the opening region;
forming a first insulation layer on the pixel region and peripheral region;
removing a portion of the first insulation layer in the opening region;
forming a second insulation layer on the first insulation layer and the opening region;
removing a portion of the second insulation layer to form an opening for exposing the pad; and
forming a pad electrode on the pad.
34. (Newly added) The method of claim 33, further comprising a step of forming a rugged structure on a surface of the second insulation layer.
35. (Newly added) The method of claim 33, wherein the step of forming a first insulating layer comprises forming a plurality of grooves therein.